

**Amendment to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

Claims 1-33 (canceled).

Claim 34 (previously presented): An internal occlusion balloon catheter for occluding blood flow through an aorta of a hypothermic patient, comprising:

a flexible, elongate cannula having a distal end and a proximal end and extending along an axis having an internal channel for the controlled application of fluid under pressure; and

an inflatable and radially expandable balloon envelope attached to said cannula and extending from adjacent said distal end of said cannula to adjacent said proximal end of said cannula;

in an inflated condition, said balloon envelope forming an elongate, continuous, substantially-cylindrical tube along its full length, and when positioned within the patient's aorta, said full length of said tube of said balloon envelope being of sufficient length to extend continuously from a location adjacent a bottom of the patient's abdominal aorta through the patient's aortic arch and into the patient's ascending aorta thereby substantially filling and occluding flow within the patient's entire aorta and preventing

cross-flow through the aorta between various branch vessels branching from the aorta.

Claim 35 (previously presented): An internal occlusion balloon catheter according to claim 34, wherein said catheter, including said cannula and said balloon envelope, is flexible and pre-shaped into a J-shape.

Claim 36 (previously presented): An internal occlusion balloon catheter according to claim 35, wherein said cannula has a distal region for location within the patient's aortic arch that is pre-shaped in a curve to match an internal curvature of the patient's aortic arch.

Claim 37 (previously presented): An internal occlusion balloon catheter according to claim 36, wherein said curve of said distal region of said cannula is an arcuate curve subtending an angle of approximately 180°.

Claim 38 (previously presented): An internal occlusion balloon catheter according to claim 37, wherein the catheter has multiple lumens including at least one serving as a vent during vector recirculation with a tip of said vent lumen open to a vessel lumen.

Claim 39 (previously presented): An internal occlusion balloon catheter according to claim 38, wherein said arcuate curve has a radius of curvature of about 2 to 4 cm, said length of

said balloon envelope is about 40 to 70 cm, 20 to 30 cm, or 10 to 20 cm and said tube having an outer diameter of about 1.5 to 5.0 cm, 0.5 to 2.0 cm, or 0.3 to 1.0 cm.

Claim 40 (previously presented): An internal occlusion balloon catheter according to claim 38, wherein said balloon envelope is a single, continuous balloon having an uninterrupted internal space for expansion fluid.

Claim 41 (previously presented): An internal occlusion balloon catheter according to claim 38, wherein said balloon envelope includes a series of separate balloon segments disposed in end-to-end relationship with no gaps therebetween.

Claim 42 (previously presented): An internal occlusion balloon catheter for occluding blood flow through a vena cavae of a hypothermic patient, comprising:

a flexible, elongate cannula having a distal end and a proximal end and extending along an axis having an internal channel for the controlled application of fluid under pressure; and  
a series of inflatable and radially expandable balloons attached to said cannula; in an inflated condition, each of said series of balloons forming an elongate, continuous, substantially-cylindrical tube along its full length, and when positioned within the patient's vena cavae, one of said balloons being of sufficient length to extend continuously from a location adjacent a lower end of the patient's inferior vena cava to just below a right atrium of the

patient's heart and another one of said balloons being of sufficient length to extend through the patient's superior vena cava and occlude the azygous vein but does not extend into the right atrium.

Claim 43 (previously presented): An internal occlusion balloon catheter according to claim 42, wherein said series of balloons includes an intermediate balloon, and wherein said intermediate balloon has a distensibility substantially lower than a distensibility of other of said balloons such that, when the balloon catheter is disposed in the vena cavae of the patient, said intermediate balloon extends within the right atrium of the patient's heart and expansion of said intermediate balloon is prevented from excessively distending the patient's heart.

Claim 44 (previously presented): An internal occlusion balloon catheter according to claim 42, wherein the catheter has multiple lumens including at least one serving as a vent during vector recirculation with said vent lumen being open to the right atrium.

Claim 45 (previously presented): An internal occlusion balloon catheter according to claim 44, wherein said length of said tube formed by said series of balloons is about 40 to 70 cm, 20 to 30 cm, or 10 to 20 cm and said tube has an outer diameter of about 2 to 5 cm, 1 to 2 cm, or 0.3 to 1 cm.